Non-Foil High Barrier Food Packaging Materials for Human Centered Spacecrafts, Phase I

Completed Technology Project (2009 - 2009)

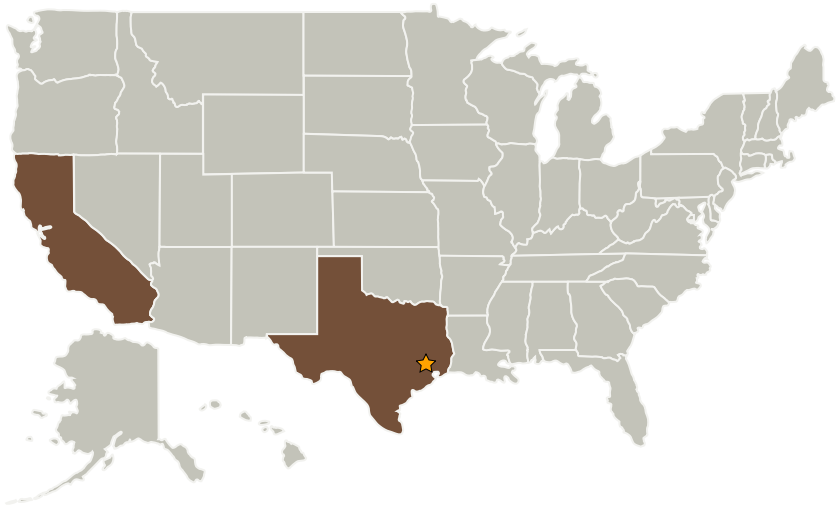
Project Introduction

This project aims to develop food packaging technologies for extending shelf-live toward maintaining healthy diet and psychological well being of the space crew. The underlying technology builds on sol-gel core competency of the company. InnoSense LLC (ISL) will collaborate with the Food Technology Department at Ohio State University (OSU) for independent testing of the Flexible ORMOSIL Nanocomposite (Flexorn

TM

) barrier materials. Through an iterative process of coating and testing, the Phase I project would demonstrate: (a) that the Flexorn barrier can be deposited onto polymeric substrates and can be adhesively bonded to a polypropylene layer for food packaging applications; (b) achievement of water vapor transmission rate (WVTR) < than 1 g/m2-day and oxygen transmission rate (OTR) < than 1 cc/m2-day for the flexible thin-film barrier. The focus of Phase II will be optimization of the barrier architecture, and the evaluation of prototype flexible pouches for their mechanical and barrier properties after retorting, a process typically used to package reheatable foods in flexible packaging applications. Prominent members of the Center for Advanced Processing and Packaging Studies (CAPPS) at OSU (e.g., Kraft Foods) have expressed strong interest in applying this NASA-funded technology to expand their market shares.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Innosense, LLC	Supporting Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB)	Torrance, California

Primary U.S. Work Locations	
California	Texas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.1 Materials
    - TX12.1.5 Coatings